

Robert H. Sloan

<https://cs.uic.edu/profiles/robert-sloan/>

Education

Massachusetts Institute of Technology

Ph.D. in Computer Science, June, 1989.

Ph.D. adviser: Prof. Ronald Rivest; thesis area: Computational Learning theory.

S.M. in Electrical Engineering and Computer Science, September 1986.

S.M. thesis Adviser: Prof. Silvio Micali; thesis area: cryptography.

Yale Law School

Classes in law, 1983–1984.

Yale College

B.S. in mathematics, May, 1983. Graduated *summa cum laude* with honors in mathematics; Phi Beta Kappa.

Work Experience

University of Illinois at Chicago

Computer Science Department Head, August 2009–present. Interim Department Head, 2008–2009; Acting Department Head, 2007–2008.

Manage department with approximately 1650 total students, \$8 million operating budget, and \$10 million annual research expenditures.

Professor, Department of Computer Science, August 2006–present.

Director of Graduate Studies, 2004–2007.

Associate Professor, Department of Computer Science (combined EECS Department until July 2001), August 1996–August 2006.

Director of Undergraduate Students, 1998–2000.

Assistant Professor, Department of Electrical Engineering and Computer Science, 1990–1996.

National Science Foundation

Program Director for Theory of Computing Program.

Division of Computer-Communications Research (now called Computer-Communications Foundations) in CISE Directorate, Jan. 2001–Aug. 2002.

Managed \$8.1 million base program budget as well as \$11 million of Information Technology Research (ITR) grants.

Harvard University

Postdoctoral fellow under Prof. Leslie Valiant, Computer Science, 1989–1990.

Publications

Books

- [1] Robert H. Sloan and Richard Warner. *The Privacy Fix: How To Preserve Privacy in the Onslaught of Surveillance*. In press. Cambridge University Press, Oct. 2021.
- [2] Robert H. Sloan and Richard Warner. *Why Don't We Defend Better? Data Breaches, Risk Management, and Public Policy*. CRC Press, 2019.
- [3] Robert H. Sloan and Richard Warner. *Unauthorized Access: The Crisis in Online Privacy and Security*. CRC Press, 2013.
- [4] R. Shackelford et al. *Computing Curricula 2005: The Overview Report*. IEEE Computer Society Press, 2005.
- [5] Jyrki Kivinen and Robert H. Sloan, eds. *Computational Learning Theory: Proceedings of COLT 2002*. Springer, 2002. ISBN: 3-540-43836-X.
- [6] E. Roberts et al. *Computing Curricula 2001*. IEEE Computer Society Press, 2001.

Journal Articles

- [7] Richard Warner and Robert H. Sloan. "Making Artificial Intelligence Transparent: Fairness and the Problem of Proxy Variables". *Criminal Justice Ethics* (2021). Accepted for publication. To appear. Preliminary version available at SSRN: <https://ssrn.com/abstract=3764131>.
- [8] Robert H. Sloan and Richard Warner. "Beyond Bias: Artificial Intelligence and Social Justice". *Virginia Journal of Law and Technology* 24.1 (2020), pp. 1–32. Available at: <https://www.vjolt.org/s/v24i1SloanWarner.pdf>.
- [9] Robert H. Sloan and Richard Warner. "Algorithms and Human Freedom". *Santa Clara High Tech. L.J.* 35.2 (2019). 34 pages. Available at: <https://digitalcommons.law.scu.edu/chtlj/vol35/iss4/2/>.
- [10] Robert H. Sloan and Richard Warner. "How Much Should We Spend to Protect Privacy?: Data Breaches and the Need for Information We Do Not Have". *Journal of Law, Economics, & Policy* 15.1 (2019), pp. 119–140. Available at: <http://jlep.net/home/issues/>.
- [11] Robert H. Sloan and Richard Warner. "When Is an Algorithm Transparent?: Predictive Analytics, Privacy, and Public Policy". *IEEE Security & Privacy* 16.3 (2018), pp. 18–25.
- [12] Richard Warner and Robert H. Sloan. "The Ethics of the Algorithm: Autonomous Systems and the Wrapper of Human Control". *Cumberland Law Review* 48.1 (2018), pp. 101–131.
- [13] Stellan Ohlsson et al. "Measuring an artificial intelligence system's performance on a Verbal IQ test for young children". *Journal of Experimental & Theoretical Artificial Intelligence* 29.4 (2017), pp. 679–693. DOI: <https://doi.org/10.1080/0952813X.2016.1213060>.
- [14] Robert H Sloan, Despina Stasi, and György Turán. "Hydras: Directed hypergraphs and Horn formulas". *Theoretical Computer Science* 658 (2017), pp. 417–428. DOI: <https://doi.org/10.1016/j.tcs.2016.05.036>.
- [15] Robert H Sloan and Richard Warner. "Relational Privacy: Surveillance, Common Knowledge, and Coordination". *U. St. Thomas JL & Pub. Pol'y* 11 (2017), pp. 1–24. Available at: <https://ir.stthomas.edu/cgi/viewcontent.cgi?article=1115&context=ustjlpp>.

- [16] Robert H Sloan and Richard Warner. ““I’ll See”: How Surveillance Undermines Privacy by Eroding Trust”. *Santa Clara High Tech. L.J.* 32 (2016), pp. 221–267. Available at: <http://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1614&context=chtlj>.
- [17] Robert H Sloan and Richard Warner. “The Self, the Stasi, the NSA: Privacy, Knowledge, and Complicity in the Surveillance State”. *Minnesota Journal of Law, Science and Technology* 17 (2016). Also on SSRN., pp. 347–408. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2577308.
- [18] Judy Goldsmith, Nicholas Mattei, and Robert H. Sloan. “Who is Watching You Eat?” *AI Matters* 1 (2015). Preliminary version appeared in 8th Multidisciplinary Workshop on Advances in Preference Handling (MPREF), 2014., pp. 13–22. Available at: <http://dl.acm.org/citation.cfm?doid=2757001.2757004>.
- [19] Robert H. Sloan and Richard Warner. “The Harm in Merely Knowing: Privacy, Surveillance, and the Self”. *Journal of Internet Law* 19 (2015).
- [20] Robert H. Sloan and Richard Warner. “Beyond notice and Choice: Privacy, Norms, and Consent”. *Journal of High Technology Law* 14.2 (2014), pp. 370–412.
- [21] Richard Warner and Robert H Sloan. “Self, Privacy, and Power: Is It All Over?” *Tulane Journal of Technology & Intellectual Property* 17 (2014), pp. 61–108.
- [22] D. Diochnos, R. H. Sloan, and Gy. Turán. “On multiple-instance learning of halfspaces”. *Information Processing Letters* 112.23 (2012), pp. 933–936.
- [23] Robert H. Sloan, Despina Stasi, and György Turán. “Random Horn Formulas and Propagation Connectivity for Directed Hypergraphs”. *Discrete Mathematics and Theoretical Computer Science* 14 (2012), pp. 29–36.
- [24] R. Warner and R. Sloan. “Vulnerable Software: Product-Risk Norms and the Problem of Unauthorized Access”. *University of Illinois Journal of Technology, Law & Policy* 2012.1 (2012), pp. 101–150.
- [25] Richard Warner and Robert H Sloan. “Behavioral Advertising: From One-Sided Chicken to Informational Norms”. *Vanderbilt Journal of Entertainment & Technology Law* 15 (2012), pp. 49–83.
- [26] Marina Langlois and Robert H. Sloan. “Reinforcement learning via approximation of the Q-function”. *Journal of Experimental & Theoretical Artificial Intelligence* 22.3 (2010), pp. 219–235. ISSN: 0952-813X.
- [27] Marina Langlois, Robert H. Sloan, and György Turán. “Horn Upper Bounds and Renaming”. *JSAT: Journal on Satisfiability, Boolean Modeling and Computation* 7 (2009), pp. 1–15.
- [28] Robert H. Sloan, Balázs Szörényi, and György Turán. “On k -term DNF with the maximal number of prime implicants”. *SIAM J. Discret. Math.* 21.4 (2008), pp. 987–998. ISSN: 0895-4801. DOI: <http://dx.doi.org/10.1137/050632026>.
- [29] Robert H. Sloan, Balázs Szörényi, and György Turán. “Projective DNF formulae and their revision”. *Discrete Appl. Math.* 156.4 (2008), pp. 530–544. ISSN: 0166-218X. DOI: <http://dx.doi.org/10.1016/j.dam.2006.06.021>.
- [30] Piotr Berman et al. “The inverse protein folding problem on 2D and 3D lattices”. *Discrete Appl. Math.* 155 (2007), pp. 719–732.
- [31] Robert H. Sloan, Balázs Szörényi, and György Turán. “Revising threshold functions”. *Theor. Comput. Sci.* 382.3 (2007), pp. 198–208. ISSN: 0304-3975. DOI: <http://dx.doi.org/10.1016/j.tcs.2007.03.034>.

- [32] Z. Füredi et al. “On set systems with a threshold property”. *Discrete Appl. Math.* 306 (2006), pp. 3096–3111.
- [33] Judy Goldsmith and Robert H. Sloan. “New Horn Revision Algorithms”. *J. Machine Learning Research* 6 (2005), pp. 1919–1938.
- [34] J. Goldsmith et al. “Theory revision with queries: Horn, read-once, and parity formulas”. *Artificial Intelligence* 156.2 (2004), pp. 139–176.
- [35] Judy Goldsmith, Robert H Sloan, and György Turán. “Theory revision with queries: DNF formulas”. *Machine Learning* 47.2-3 (2002), pp. 257–295.
- [36] Thomas S. Messerges, Ezzat A Dabbish, and Robert H Sloan. “Examining smart-card security under the threat of power analysis attacks”. *IEEE Transactions on Computers* 51.5 (2002), pp. 541–552.
- [37] U Buy and Robert H. Sloan. “Automatic real-time analysis of reactive systems with the PARTS toolset”. *Automated Software Engineering* 8.3-4 (2001), pp. 227–273.
- [38] C. K. Chang et al. “Curricula 2001: Bringing the Future to the Classroom”. *IEEE Computer* (1999).
- [39] A/ Prasad Sistla et al. “Towards a theory of cost management for digital libraries and electronic commerce”. *ACM Transactions on Database Systems (TODS)* 23.4 (1998), pp. 411–452.
- [40] R. H Sloan, K. Takata, and G. Turán. “On Frequent Sets of Boolean Matrices”. *Annals of Mathematics and Artificial Intelligence* 24 (1998), pp. 193–209.
- [41] Dana Angluin et al. “Malicious Omissions and Errors in Answers to Membership Queries”. *Machine Learning* 28 (1997), pp. 211–255.
- [42] Robert H. Sloan and Ugo Buy. “Reduction rules for time Petri nets”. *Acta Informatica* 33 (1996), pp. 687–706.
- [43] Sally A. Goldman and Robert H. Sloan. “Can PAC Learning Algorithms Tolerate Random Attribute Noise?” *Algorithmica* 14 (1995), pp. 70–84.
- [44] Robert H. Sloan. “Four types of noise in data for PAC learning”. *Information Processing Letters* 54 (1995), pp. 157–162.
- [45] Sally A Goldman and Robert H Sloan. “The power of self-directed learning”. *Machine Learning* 14.3 (1994), pp. 271–294.
- [46] Ronald L. Rivest and Robert Sloan. “A Formal Model of Hierarchical Concept-Learning”. *Inform. Comput.* 114 (1994), pp. 88–114.
- [47] Ronald L. Rivest and Robert H. Sloan. “On Choosing between Experimenting and Thinking when Learning”. *Inform. Comput.* 106 (1993), pp. 1–25.
- [48] David Helmbold, Robert Sloan, and Manfred K. Warmuth. “Learning Integer Lattices”. *SIAM Journal on Computing* 21.2 (1992), pp. 240–266.
- [49] David Helmbold, Robert Sloan, and Manfred K. Warmuth. “Learning Nested Differences of Intersection-Closed Concept Classes”. *Machine Learning* 5.2 (1990), pp. 165–196.
- [50] Silvio Micali, Charles Rackoff, and R. Sloan. “The Notion of Security for Probabilistic Cryptosystems”. *SIAM Journal on Computing* 17.2 (1988), pp. 412–426.

Refereed Conference and Workshop Papers

- [51] Robert H. Sloan et al. “CS + X Meets CS 1: Strongly Themed Intro Courses”. In: *Proc. 51st ACM SIGCSE Technical Symposium on Computer Science Education Proc. 49th ACM SIGCSE Technical Symposium on Computer Science Education*. Appeared in conference proceedings. Conference presentations canceled due to pandemic. Mar. 2020.
- [52] Tanya Berger-Wolf et al. “A Biology-themed Introductory CS Course at a Large, Diverse Public University”. In: *Proc. 49th ACM SIGCSE Technical Symposium on Computer Science Education*. 2018, pp. 233–238.
- [53] Robert H. Sloan, Cynthia Taylor, and Richard Warner. “Initial Experiences with a CS + Law Introduction to Computer Science (CS 1)”. In: *Proceedings of the 2017 ACM Conference on Innovation and Technology in Computer Science Education*. ITiCSE '17. 2017, pp. 40–45. DOI: 10.1145/3059009.3059029. Available at: <http://doi.acm.org/10.1145/3059009.3059029>.
- [54] Tanya Berger-Wolf et al. “Commonsense knowledge bases and network analysis”. In: *Proc. 11th Int. Symp. On Logical Formalizations of Commonsense Reasoning*, 2013. Available at: <http://www.commonsense2013.cs.ucy.ac.cy/program.html>.
- [55] S. Ohlsson et al. “Verbal IQ of a Four-Year Old Achieved by an AI System”. In: *Proc. Annu. Conf. Assoc. Advancement Artificial Intelligence (AAAI)*. 2013.
- [56] Robert H Sloan and Richard Warner. “Big Data and the “New” Privacy Tradeoff”. In: *Big Data & Privacy: Workshop Paper Collection*. Future of Privacy Forum. 2013. Available at: <http://www.futureofprivacy.org/big-data-privacy-workshop-paper-collection/>.
- [57] Kira Adaricheva et al. “Horn Belief Contraction: Remainders, Envelopes and Complexity”. In: *Proc. 13th Int. Conf. Principles of Knowledge Representation and Reasoning (KR)*. Preliminary version appeared in Commonsense Workshop in 2011. May 2012. Available at: <https://www.aaai.org/ocs/index.php/KR/KR12/paper/view/4497>.
- [58] Stellan Ohlsson et al. “An Approach to Evaluate AI Commonsense Reasoning Systems”. In: *Proc. 25th Int. Florida Artificial Intelligence Research Society Conference*. 2012, pp. 371–374.
- [59] Robert H. Sloan, Despina Stasi, and György Turán. “Hydra formulas and related problems for Horn minimization”. In: *Graph-Theoretic Concepts in Computer Science (WG)*. LNCS. Springer, 2012, pp. 237–248.
- [60] M.B. Russom, Richard Warner, and Robert H. Sloan. “Legal concepts meet technology: a 50-state survey of privacy laws”. In: *Proc. 2011 Workshop on Governance of Technology, Information, and Policies (GTIP)*. 2011, pp. 29–37. Available at: <http://www.cs.uic.edu/~sloan/papers/RussomEtAl50StateSurvey.pdf>.
- [61] Robert H Sloan and Richard Warner. “Developing foundations for accountability systems: informational norms and context-sensitive judgments”. In: *Proc. 2010 Workshop on Governance of Technology, Information and Policies (GTIP)*. GTIP '10. New York, NY, USA, 2010, pp. 21–26. ISBN: 978-1-4503-0446-7. DOI: 10.1145/1920320.1920324. Available at: <http://www.acsac.org/2010/workshop/p21-sloan.pdf>.
- [62] Lillian N Cassel et al. “Curriculum update from the ACM education board: CS2008 and a report on masters degrees”. In: *ACM SIGCSE Bulletin*. Vol. 40. 1. ACM. 2008, pp. 530–531.
- [63] Marina Langlois et al. “Combinatorial problems for Horn clauses”. In: *Tenth Int. Symp. Artificial Intelligence and Mathematics (ISAIM)*. 2008. Available at: <http://isaim2008.unl.edu/index.php?page=proceedings>.

- [64] Marina Langlois et al. “Horn Complements: Towards Horn-to-Horn Belief Revision”. In: *Proc. AAAI 2008*. 2008, pp. 466–471.
- [65] R. H. Sloan and P. Troy. “CS 0.5: a better approach to introductory computer science for majors”. In: *Proc. 39th ACM SIGCSE technical symposium on Computer Science Education*. 2008, pp. 271–275.
- [66] Lillian N Cassel et al. “An Initiative to Attract Students to Computing”. In: *Proc. 38th SIGCSE Technical Symposium on Computer Science Education*. 2007, pp. 133–134.
- [67] Lillian N. Cassel et al. “The Computing Ontology Project—The Computing Education Application”. In: *Proc. 38th ACM SIGCSE Technical Symposium on Computer Science Education*. 2007, pp. 519–520.
- [68] Judy Goldsmith and Robert H. Sloan. “The Conference Paper Assignment Problem”. In: *Proc. AAAI Workshop on Preference Handling for Artificial Intelligence*. 2007.
- [69] Marina Langlois, Robert H. Sloan, and György Turán. “Horn Upper Bounds and Renaming”. In: *Proc. SAT 2007: Tenth Int. Conf. Theory and Applications of Satisfiability Testing*. Vol. 4501. Lecture Notes in Computer Science. 2007, pp. 80–93.
- [70] Lillian Boots Cassel, Andrew McGettrick, and Robert H. Sloan. “A Comprehensive Representation of the Computing and Information Disciplines”. In: *Proc. 37th ACM SIGCSE Technical Symposium on Computer Science Education*. 2006, pp. 199–200.
- [71] Stephen Dranger, Robert H. Sloan, and Jon A. Solworth. “The Complexity of Discretionary Access Control”. In: *Proc. Advances in Information and Computer Security, First Intl. Workshop on Security (IWSEC 06)*. Lecture Notes in Computer Science. Springer, 2006, pp. 405–420.
- [72] Marina Langlois, Robert H. Sloan, and György Turán. “Horn Upper Bounds of Random 3-CNF: A Computational Study”. In: *Ninth Int. Symp. Artificial Intelligence and Mathematics (ISAIM)*. 2006. Available at: <http://anytime.cs.umass.edu/aimath06/>.
- [73] Russell Shackelford et al. “Computing Curricula 2005: The Overview Report”. In: *Proc. 37th ACM SIGCSE Technical Symposium on Computer Science Education*. 2006, pp. 456–457.
- [74] Lillian Boots Cassel, Russell Shackelford, and Robert H. Sloan. “A Synthesis and Ontology of All of Computing”. In: *Proc. 36th ACM SIGCSE Technical Symposium on Computer Science Education*. 2005, pp. 65–66.
- [75] Judy Goldsmith et al. “Theory Revision with Queries: Results and Problems”. In: *Proceedings of the Workshop on Learning with Logics and Logics for Learning (LLLL)*. 2005, pp. 39–44.
- [76] Marina Irodova and Robert H. Sloan. “Reinforcement Learning and Function Approximation”. In: *Proc. 18th International Florida Artificial Intelligence Research Symposium Conference—FLAIRS 2005*. 2005, pp. 455–460.
- [77] Piotr Berman et al. “The Protein Sequence Design Problem in Canonical Model on 2D and 3D Lattices”. In: *Proc. 15th Annual Symp. Combinatorial Pattern Matching (CPM)*. Vol. 3109. Lecture Notes in Computer Science. Springer, 2004, pp. 244–253.
- [78] Judy Goldsmith et al. “New Revision Algorithms”. In: *Proc. Algorithmic Learning Theory (ALT)*. Vol. 3244. Lecture Notes in Artificial Intelligence. Springer, 2004, pp. 395–409.
- [79] Russell Shackelford et al. “Computing Curricula 2004: The Overview Project”. In: *Proc. 35th ACM SIGCSE Technical Symposium on Computer Science Education*. 2004, p. 501.
- [80] Jon A Solworth and Robert H Sloan. “Security Property Based Administrative Controls”. In: *Proc. 9th European Symposium on Research in Computer Security (ESORICS)*. Vol. 3139. Lecture Notes in Computer Science. Springer, 2004, pp. 244–259.

- [81] Jon A. Solworth and Robert H. Sloan. “A Layered Design of Discretionary Access Controls with Decidable Safety Properties”. In: *Proc. 2004 IEEE Symposium on Security and Privacy*. 2004.
- [82] Tamás Horváth, Robert H. Sloan, and György Turán. “Learning Logic Programs with Unary Partial Function Graph Background Knowledge”. In: *First International Workshop on Mining Graphs, Trees and Sequences (MGTS-2003)*. 2003. Available at: <http://www.ar.sanken.osaka-u.ac.jp/MGTS-2003CFP.html>.
- [83] John Impagliazzo et al. “Computer Engineering Computing Curricula”. In: *Proc. 34th ACM SIGCSE Technical Symposium on Computer Science Education*. 2003, pp. 355–356. ISBN: 1-58113-648-X. DOI: 10.1145/611892.611915.
- [84] Robert H. Sloan, B. Szörényi, and György Turán. “Projective DNF Formulae and Their Revision”. In: *Proc. COLT 2003: 16th Annual Conf. on Learning Theory*. Vol. 2777. Lecture Notes in Artificial Intelligence. Springer, 2003, pp. 625–639.
- [85] Robert H. Sloan and Balázs Szörényi. “Revising projective DNF in the presence of noise”. In: *Proc. Kalmár Workshop on Logic and Computer Science*. Szeged, Hungary: Dept. of Informatics, University of Szeged, 2003, pp. 143–152.
- [86] Eric Roberts et al. “Computing Curricula 2001 implementing the recommendations”. In: *Proc. 33rd ACM SIGCSE Technical Symposium on Computer Science Education*. 2002, pp. 167–168.
- [87] Judy Goldsmith and Robert H. Sloan. “More Theory Revision with Queries”. In: *Proc. 32nd Annu. ACM Sympos. Theory Comput.* 2000, pp. 441–448.
- [88] Judy Goldsmith and Robert H. Sloan. “The Complexity of Model Aggregation”. In: *Proc. 5th Int. Conf. Artificial Intelligence Planning & Scheduling (AIPS)*. 2000, pp. 122–129.
- [89] Judy Goldsmith et al. “Improved Algorithms for Theory Revision with Queries”. In: *Proc. 13th Annu. Conf. on Comput. Learning Theory*. 2000, pp. 236–247.
- [90] T. S. Messerges, E. A. Dabbish, and R. H. Sloan. “Investigations of Power Analysis Attacks on Smartcards”. In: *Proceedings of the USENIX Workshop on Smartcard Technology*. 1999, pp. 151–161.
- [91] T. S. Messerges, E. A. Dabbish, and R. H. Sloan. “Power Analysis Attacks of Modular Exponentiation in Smartcards”. In: *Workshop on Cryptographic Hardware and Embedded Systems*. Springer-Verlag, 1999, pp. 144–157.
- [92] Robert H. Sloan and György Turán. “On Theory Revision with Queries”. In: *Proc. 12th Annu. Conf. on Comput. Learning Theory*. 1999, pp. 41–52.
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- [95] Ugo Buy and Robert H. Sloan. “Analysis of Real-Time Programs with Simple Time Petri Nets”. In: *Proc. 1994 Int. Symp. Software Testing and Analysis*. 1994, pp. 228–239.
- [96] Ugo Buy and Robert Sloan. “A Petri-Net-Based Approach to Real-Time Program Analysis”. In: *Proc. Seventh Int. Workshop Software Specification and Design*. 1993, pp. 56–60.
- [97] David Helmbold Robert Sloan and Manfred K Warmutht. “Learning Integer Lattices”. In: *Proc. 3rd Annu. Workshop on Comput. Learning Theory*. Morgan Kaufmann. 1990, p. 288.

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- [100] Ronald L Rivest and Robert H Sloan. “Learning Complicated Concepts Reliably and Usefully.” In: *AAAI*. 1988, pp. 635–640.
- [101] Robert Sloan. “Types of noise in data for concept learning”. In: *Proc. 1st Annu. Workshop on Comput. Learning Theory*. Morgan Kaufmann, 1988, pp. 91–96.
- [102] Silvio Micali, Charles Rackoff, and Bob Sloan. “The notion of security for probabilistic cryptosystems”. In: *Proceedings on Advances in cryptology—CRYPTO’86*. Springer-Verlag. 1987, pp. 381–392.

In Collection

- [103] Richard Warner and Robert H. Sloan. “Defending Our Data: The Need for Information We Do Not Have”. In: *Value of Information: Intellectual Property, Privacy, and Big Data*. Peter Luck Publishing, 2018, pp. 149–165.
- [104] Robert H. Sloan. “Why Computer Science?” In: *Computer Science for the Curious: Why Study Computer Science?* Ed. by Kishor Vaidya. 2016.
- [105] Richard Warner and Robert H. Sloan. “The Undermining Impact of Information Processing on Informational Privacy”. In: *Rights of Personality in The XXI Century*. Ed. by Justyna Balcarczyk. Wolters-Kluwer, 2012, pp. 384–402.
- [106] R. H. Sloan, B. Szörényi, and G. Turán. “Learning Boolean functions with queries”. In: *Boolean Models and Methods in Mathematics, Computer Science, and Engineering*. Vol. 134. Encyclopedia of Mathematics and its Applications. Cambridge University Press, 2010, pp. 221–256.
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- [108] Robert H. Sloan. “Pac Learning, Noise, and Geometry”. In: *Learning and Geometry: Computational Approaches*. Birkhäuser, 1996, pp. 21–41.

Unrefereed

- [109] J. Goldsmith and R. H. Sloan. “Write it Right: 4: Several Matters of Mechanics,” *IEEE Professional Communication Society Newsletter* 52.1 (2008).
- [110] J. Goldsmith and R. H. Sloan. “Write it Right: 5: Considerations for Experimental Work”. *IEEE Professional Communication Society Newsletter* 52.2 (2008).
- [111] J. Goldsmith and R. H. Sloan. “Write it Right: 1: The Very Basics”. *IEEE Professional Communication Society Newsletter* 51.8 (2007).
- [112] J. Goldsmith and R. H. Sloan. “Write it Right: 2: Relevant Forms of Technical Writing”. *IEEE Professional Communication Society Newsletter* 51.10 (2007).

- [113] J. Goldsmith and R. H. Sloan. “Write it Right: 3: Reviews, Coauthorship, and Citations”. *IEEE Professional Communication Society Newsletter* 51.11 (2007).
- [114] Robert H. Sloan. “The Joys of being an NSF Program Director”. *ACM SIGACT News* 38.1 (2007), pp. 7–8.
- [115] R. H. Sloan. “Mathematics Comes Up Trumps”. *The Economist* 7510 (1987). No byline published, in August 8, 1987 issue, p. 80.

**Grants &
Contracts
Awarded***Break Through Tech Chicago*

Pivotal Ventures, 2020–2025, PI. One of the largest grants in the history of the UIC College of Engineering, amount not published at funder's request.

<https://chicago.breakthroughtech.org/>.

Diversifying CS with a Biology-themed Introductory CS Course at a Large, Diverse Public University

National Science Foundation, 2016–2021, PI, \$299,255.

Designing and Evaluating a CS + Law Introduction to Computer Science

National Science Foundation, 2016–2021, PI, \$254,499.

Scholarships for Services (SFS): Scholarships in Cybersecurity and Information Assurance

National Science Foundation, 2012–2019, co-PI with PI Prof. V. Venkatakrishnan of UIC CS Dept., \$1.15 million.

IGERT: Electronic Security and Privacy. Technological, Human, Enterprise and Legal Perspectives

National Science Foundation, 2011–2019, one of five co-PIs, \$3,200,000.

S-STEM: UIC CS Scholars

National Science Foundation, 2009–2015, PI with three co-PIs, \$598,000.

DHS-STEM Fellowships in Electronic Security

Department of Homeland Security, 2012–2015, co-PI with PI Prof. V. Venkatakrishnan of UIC CS Dept., \$249,925.

GEM Fellow Program

The National GEM Consortium, 2012–2013, sole PI, \$58,000.

Privacy with Respect to Private Corporation in the 21st Century: Legal and Computer Security Issues

National Science Foundation, 2009–2011, sole PI, \$100,000.

Theoretical Foundations of Evolving Knowledge Bases

National Science Foundation, 2009–2012, co-PI with PI Prof. Gy. Turán (of UIC Mathematics Dept.), \$500,000.

Collaborative Research: Broadening Participation in Computing Alliance Planning Grant

National Science Foundation, one of four UIC co-PIs in four-institution planning grant, 2009–2010 (18 months), \$400,000 total, \$60,000 UIC share.

IGERT: Graduate Program in Computational Transportation Science

National Science Foundation, 2006–2011, one of five co-PIs, \$3,097,976.

Complexity of Knowledge Representation

National Science Foundation, 2004–2007, PI with co-PI Prof. Gy. Turán (of UIC Mathematics Dept.), \$300,000.

CRI: The SecLab at UIC

National Science Foundation, 2006–2009, one of five co-PIs, \$159,715.

**Grants &
Contracts
Awarded
(cont.)**

- A Multimedia Introduction to Computer Science: Two courses from one*
National Science Foundation Division of Undergraduate Education, July 2004–July 2006, \$99,269, PI (with co-PI Lecturer Pat Troy).
- Theory Revision and Related Problems in Learning Theory.*
National Science Foundation, 2001–2004, PI with co-PI Prof. Gy. Turán (of UIC Mathematics Dept.), approximately \$265,000.
- Theory of Computation Research*
National Science Foundation, 2000–2001, \$137,333, 100% Sloan.
Add-on for 2002 extension (National Science Foundation) \$102,545, 100% Sloan.
- Logic-based approaches to learning and knowledge discovery.*
National Science Foundation, 1998–2001, with Prof. Gy. Turán (of UIC Mathematics Dept.), \$253,001.
- Analyzing Real-time Properties of Concurrent Programs.*
National Science Foundation Award, 1994–96, with Assistant Professor Ugo Buy (of UIC EECS Dept.), \$90,000.
- A Software Engineering Course Sequence for Distributed and Real-Time Systems.*
DISA award. 1994–1995, with Assistant Professor Ugo Buy (of UIC EECS Dept.), \$67,035.
- GTECH/UIC Consortium, Yr. 5.*
GTECH. 1994–1995, with Associate Professor Tom Moher (of UIC EECS Dept.), \$250,000.
- Some Practical Issues in Computational Learning Theory.*
National Science Foundation Research Initiation Award, 1991–1993. \$35,176.

- Selected
Invited
Talks &
Presentations**
- “Alien Intelligence: Ensuring Fairness in Algorithmic Decision-Making.” Amsterdam Privacy Conference, October 2018.
- “When Is an Algorithm Transparent?: Predictive Analytics, Privacy, and Public Policy,” Brussels Privacy Symposium (Future of Privacy Forum and IEEE Security & Privacy), November 2017.
- “Improving Our Defenses,” at IIT Chicago-Kent College of Law “Defending our Data” Conference, April 2017.
- “How Much Should We Spend to Protect Privacy?: The Need for Information We Do Not Have,” Fifth Annual Public Policy Symposium on the Law & Economics of Privacy and Data Security: Developing a Benefit-Cost Framework for Data Policy, George Mason Law School and Future of Privacy Forum, June 2017.
- “I’ll See”: How Surveillance Undermines Privacy By Eroding Trust, by Robert Sloan, Computer Science, Privacy Law Scholars Conference, Washington, DC, June 2016.
- “Responding to the Wave of Data Breaches,” Argonne National Lab Security Seminar Series, June 2015.
- “The Self, the Stasi, the NSA: Privacy, Knowledge, and Complicity in the Surveillance State,” Privacy Law Scholars Conference, Berkeley, CA, June 2015.
- “Responding to the Wave of Data Breaches,” Keynote for the ARMA Chicago Chapter Annual Meeting, May 2015.
- “Self, Privacy, and Power: Is It All Over?,” Privacy Law Scholars Conference, Washington, DC, June 2014.
- “Security Risks of Big Data: Privacy, Openness, Data Management,” presentation at joint FBI and American Academy for the Advancement of Science meeting on Big Data, Life Sciences, & National Security, Washington, DC, April 2014.
- “Software Vulnerabilities: The Obvious Legal Responses and Why They Will Not Work,” Information Analysis of Economic and Financial Crimes, Warsaw, Poland, May 2013.
- “Beyond Notice and Choice, Privacy Law Scholars Conference,” Berkeley, CA, June 2013.
- “Behavioral Advertising: From One-Sided Chicken to Informational Norms,” Privacy Law Scholars Conference, Washington, DC, June 2012.
- “Do Not Track: What Do We Want? What Can We Get?,” Conference on Internet Privacy, Social Networks, and Data Aggregation, Chicago-Kent Law School, March 2012.
- “Software Vulnerabilities: The Obvious Legal Responses Why They Will Not Work,” University of Szeged, Szeged, Hungary, November 2011.

**Selected
Invited
Talks
(cont.)**

“Software Vulnerabilities: The Obvious Legal Responses Why They Will Not Work,”
Eötvös Loránd University (ELTE), Budapest, Hungary, December 2011.

“Software Vulnerabilities: The Obvious Legal Responses and Why They Will Not Work,”
Workshop on Cybersecurity Incentives (WoCI), Fairfax, VA, June 2011.

“Theory Revision in Formal Learning Models,” invited seminar talk at Illinois Institute
of Technology Computer Science Dept., November 2005.

“Layered Design of Discretionary Access Controls,” invited seminar talk given at Uni-
versity of Louisville, Louisville, KY, April 2004.

“Power Attacks on Smart Cards,” invited seminar talk (Research Center), at University of
Kentucky, March 2004.

Mathematics and Computer Science Department seminar, Loyola University of Chicago,
Spring 2002.

Several NSF Program Director’s Reports at conferences such as IEEE FOCS, ACM
STOC, and COLT in 2001 and 2002.

Invited departmental seminar speaker, Rutgers University, December 2001.

Distinguished seminar series speaker for Ars Digita University, Cambridge Mass., June
2001.

“Computing Curricula 2001 panel presentation at Midwest Computing Conference,”
Northern Illinois University, March 2001.

“Computing Curricula 2001: How will it work for You?,” panel presentation at Thirty-
second ACM Special Interest Group on Computer Science Education (SIGCSE) Sympo-
sium on Computer Science Education, February 2001.

“Theory Revision,” invited Computer Science Dept. seminar talk at University of Ken-
tucky, Fall 2000.

“Noise in Data for Probably Approximately Correct Learning,” invited talk given to Arti-
ficial Intelligence Division of Hungarian Academy of Science, Szeged, Hungary, Decem-
ber 1999.

“Noise in Data for Probably Approximately Correct Learning,” invited talk given to Math-
ematics Institute, Budapest, Hungary, December 1999.

Computer Science Department Colloquium, Northwestern University, Spring 1995.

Annual Argonne Lab Series: Invited Speaker on cryptography, Fall 1994.

- Selected Invited Talks (cont.)**
- Invited speaker, U.S. Army Workshop on Geometry and Learning, Arlie, Virginia, 1992.
 - Computer and Information Science Department Colloquium, University of Delaware, December 1991.
 - Computer Science Department Colloquium, Carnegie-Mellon University, Fall 1990.
 - Computer Science Department Colloquium, Washington University, Fall 1990.
 - Computer Science Department Colloquium, University of Chicago, Fall 1990.
- Selected Service**
- Member Department of Homeland Security Privacy and Integrity Advisory Committee, 2017–2020.
 - Member, IL Governor’s Technology Advisory Board, CyberSecurity subcommittee, 2015–2017.
 - BRAID (Building, Recruiting, And Inclusion for Diversity) initiative (<https://anitab.org/braid-building-recruiting-and-inclusion-for-diversity/>) CS Department head, 2014–present. Enrolled UIC CS in BRAID; lead BRAID service activities at UIC; receive \$30,000 annual support of diversity initiatives, e.g., sending UIC students to Grace Hopper Celebration of Women in Computing and Tapia Celebration of Diversity in Computing.
 - Program evaluator for undergraduate computer science programs for Computing Accreditation Commission of ABET, 2001–present.
 - Member IEEE Computer Society Educational Activities Board 2001–2015; chair committee on diversity 2001–2005; chair model curriculum committee 2006–2007.
 - Member, external review team, Graduate Computer Science program at University of Buffalo Department of Computer Science, 2015.
 - Member Illinois Terrorism Task Force Cybersecurity Committee, 2010–2012.
 - Chair, site visit to recipients of major NSF grant, 2010.
 - Member, external review team, University of New Mexico Computer Science Department, 2010.
 - Member CSAB Board: Director: 2009–2010 Alternate Director, 2008.
 - IEEE Computer Society Board of Governors, 2006–2008 term.
 - Director of Graduate Studies, UIC CS Dept., August 2004–July 2007.

**Selected
Service
(cont.)**

Member IEEE Computer Society Conferences and Tutorials Board, 2001–2005

Testified before Illinois State Board of Professional Engineers on “Computer Science as an Engineering Discipline”, and issues relating to licensing of software engineers on March 24, 2005.

Member of UIC Campus Research Board (awards internal research grants) 2002–2007; co-chair of Natural Sciences and Engineering Subcommittee 2005–2007.

Program Director, National Science Foundation, Jan. 2001–Aug. 2002.

Computer Society delegate and Secretary, ACM–IEEE Computer Society joint task force to write Computing Curricula 2001: Computer Science volume. Also chair of knowledge focus group on discrete mathematics, 1997–2001.

Computer Society delegate to ACM–IEEE Computer Society joint task force for 2008 revision of Computing Curricula 2001.

Computer Society delegate, ACM–IEEE Computer Society joint task force to write Computing Curricula 2004: Computer Engineering volume.

Computer Society delegate Member, ACM–IEEE Computer Society–AIS joint task force to create overview volume for various model computing curricula, 2003–2005.

Chair, external review of computer science program at University of Massachusetts at Boston, Spring 2000.

Local Arrangements Chair, Twelfth Annual Conference on Computational Learning Theory, 1998 (COLT 1998).

Numerous UIC departmental, College of Engineering, and university level committees, 1990–present.

- Selected Editorial Boards, Program Committees Etc.**
- Editorial Board, *Electronic Proceedings in Theoretical Computer Science*, 2009–present.
 - Editorial Board, *Information and Computation*, 2007–present.
 - Editorial Board Member, *ACM Transactions on Computing Education* (previously titled *ACM Journal of Educational Resources in Computing (JERIC)*), 2003–2010.
 - Editorial Board Member, *Machine Learning*, 2003–2006.
 - Guest Editor, Special Issue of *Journal of Computer Systems and Sciences (JCSS)* on computational learning theory.
 - Program Committee chair, Twelfth International Symposium on AI and Mathematics (ISAIM 2012).
 - Program Committee co-chair, Fifteenth Annual Conference on Computational Learning Theory (COLT 2002)
 - Selected Program Committees: Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE) 2018 and 2017; Resilience Week 2018 and 2017 for International Symposium on Resilient Cyber Physical Systems; IJCAI 2011 Doctoral Consortium Program Committee; SAT 2010; SAT 2009; AAI Workshop on Preferences, 2007; International Conference on Advanced Data Mining and Applications 2005; European Conference on Machine Learning (ECML), 2003, 2004, and 2005; Computational Learning Theory Conference, 2000, 2001, 2002.
 - Local arrangements committee, STOC 2004.
 - Computational Learning Theory Conference (COLT) Steering Committee regular member, 1997–1998, and 1999–2002; Steering Committee Secretary, 2001–2016.
- Selected Refereeing**
- Articles refereed for numerous journals, including: *Journal of the ACM*, *ACM Transactions on Internet Technology*, *Ethics and Information Technology*, *Artificial Intelligence Review*, *Information and Computation*, *SIAM Journal on Computing*, *Journal of Computing Systems and Software*, *Machine Learning*, *Journal of Artificial Intelligence Research*, *IEEE Software*, *IEEE Transactions on Computers*, and *IEEE Transactions on Systems, Man and Cybernetics*.
 - Grant reviewing for: National Science Foundation, regularly early 1990s to present; DARPA occasional.

**Selected
Awards**

University of Illinois Scholar, 2019, “recognizes outstanding members of the faculty”, awarded to about 12 faculty across the University of Illinois System. (\$45,000 allocation to support each awardee’s scholarly activities.)

IEEE Computer Society Golden Core Recognition “for long-standing service to the society,” 2007.

UIC Award for Excellence in Teaching, October 2006. (Permanent \$5,000 increase in base salary).

IEEE Computer Society, Outstanding Contribution Award, “For the establishment of Computing Curricula 2005 for Computer Engineering,” 2006.

UIC Teaching Recognition Program, 2005, “recognizes the documented excellence of UIC faculty in their teaching activities.” (Permanent \$1,500 increase to base salary.)

**US Security
Clearance**

Secret.